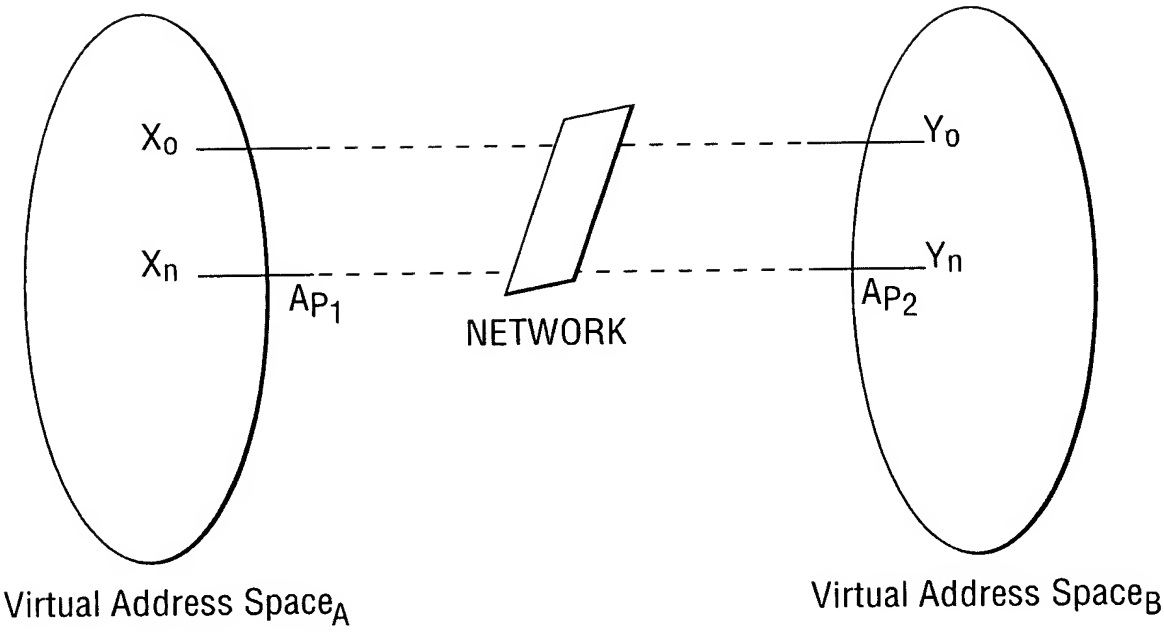
OIPE JC59
FEB 06 2004
PATENT & TRADEMARK OFFICE

Fig. 1



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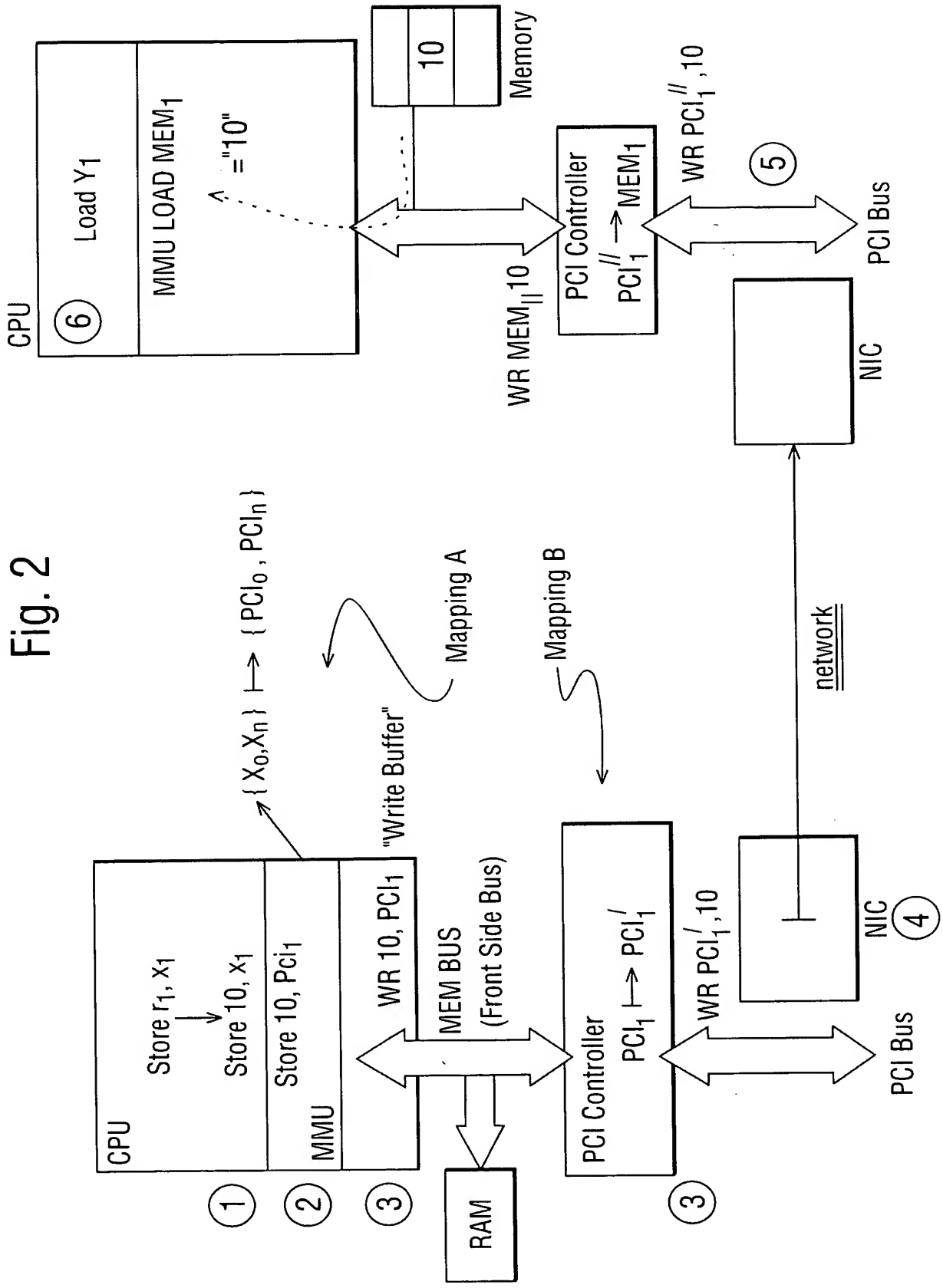


Fig. 2

Fig. 3

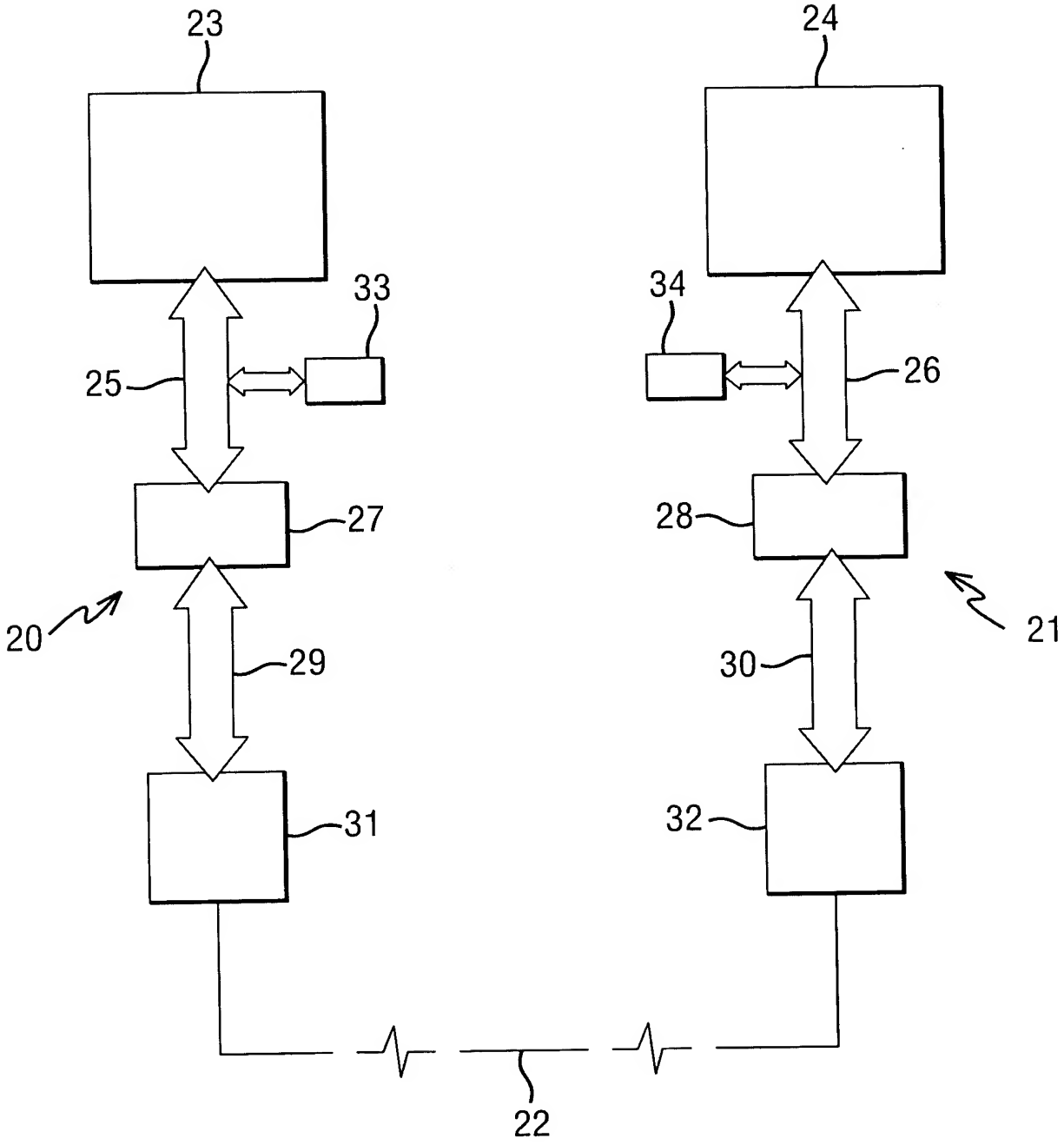
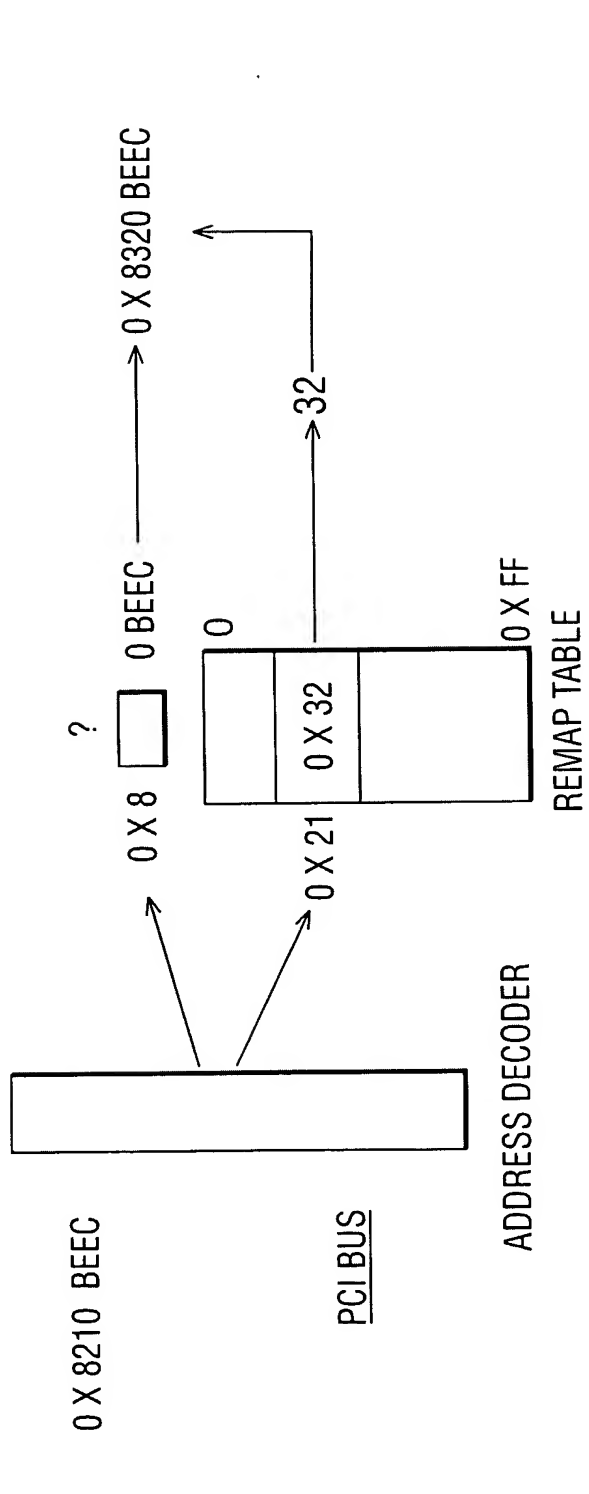


Fig. 4


0 X 8210 BEEC
PCI BUS
ADDRESS DECODER
0 X 8
?
0 BEEC
0 X 8320 BEEC
0 X 21
32
0
0 X 32
0 X FF
REMAP TABLE

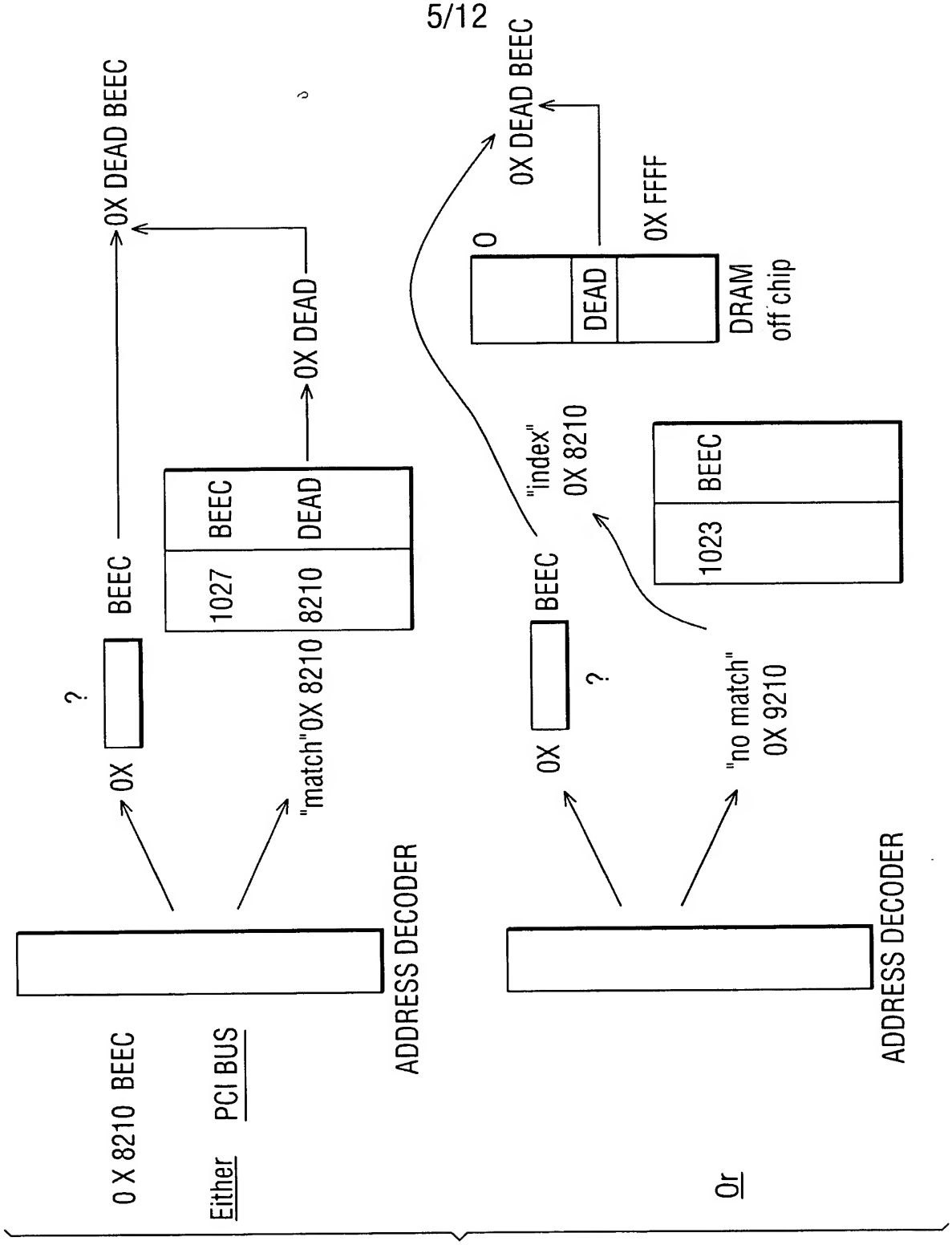

0X DEAD BEEC
0X DEAD
BEEC
DEAD
1027
8210
BEEC
?
0X
"match"0X 8210
ADDRESS DECODER
0 X 8210 BEEC
PCI BUS
Either
0X DEAD BEEC
0X FFFF
0
DEAD
DRAM
off chip
"index"
0X 8210
BEEC
1023
BEEC
?
0X
"no match"
0X 9210
ADDRESS DECODER
Or

Fig. 5

Fig. 6

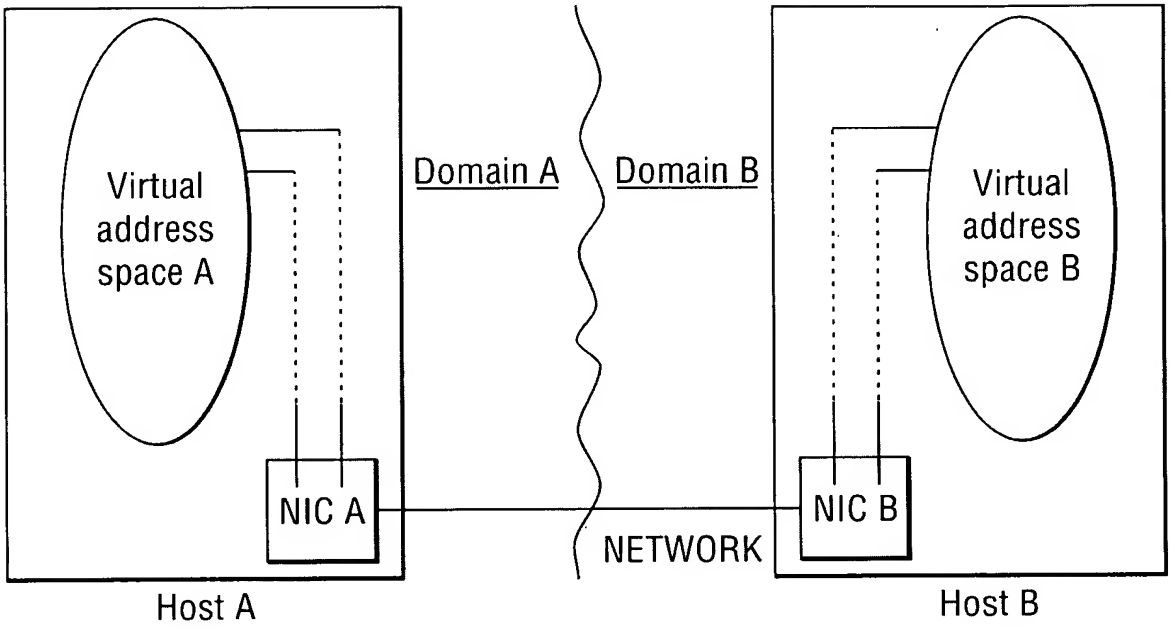

Virtual address space A
Domain A
Domain B
Virtual address space B
NIC A
NIC B
NETWORK
Host A
Host B

Fig. 7

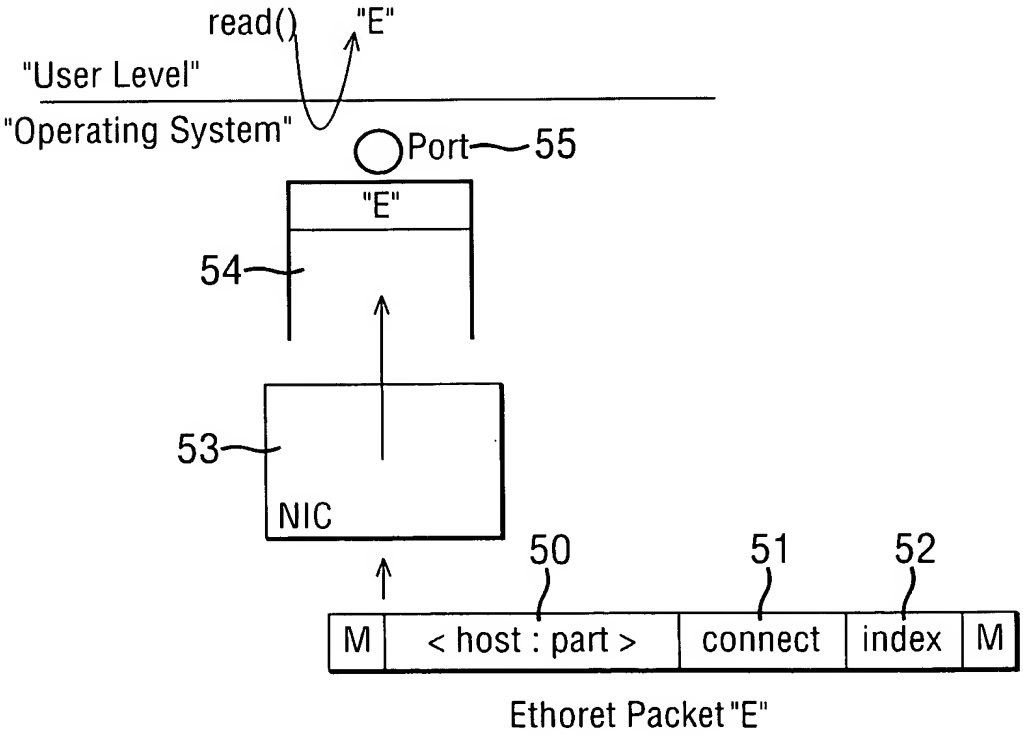

read()
"E"
"User Level"
"Operating System"
Port
55
"E"
54
53
NIC
50
51
52
M
< host : part >
connect
index
M
Ethoret Packet "E"

Fig. 8

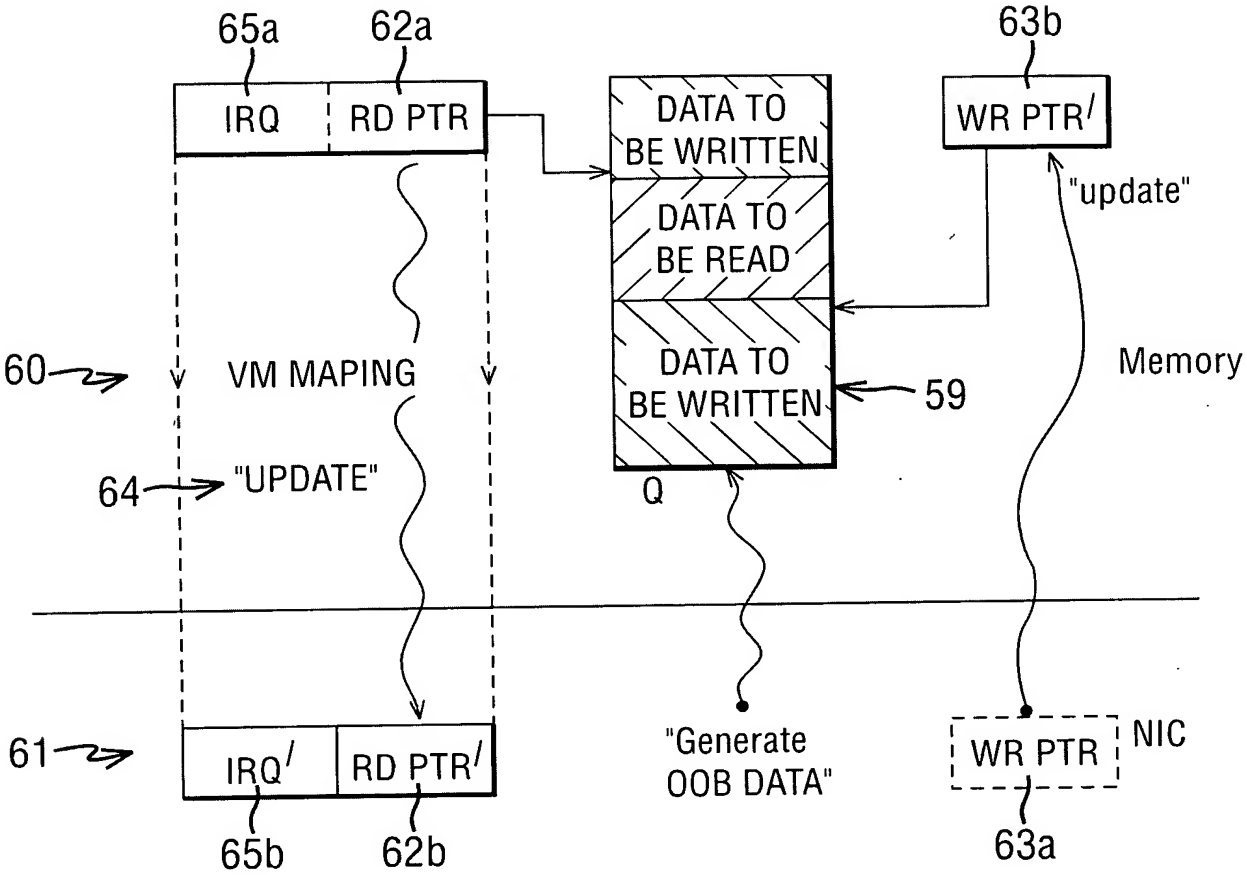

65a
62a
IRQ
RD PTR
63b
WR PTR/
DATA TO BE WRITTEN
DATA TO BE READ
DATA TO BE WRITTEN
59
Q
"update"
Memory
60
VM MAPING
64
"UPDATE"
61
IRQ/
RD PTR/
65b
62b
"Generate OOB DATA"
WR PTR
NIC
63a

Fig. 9

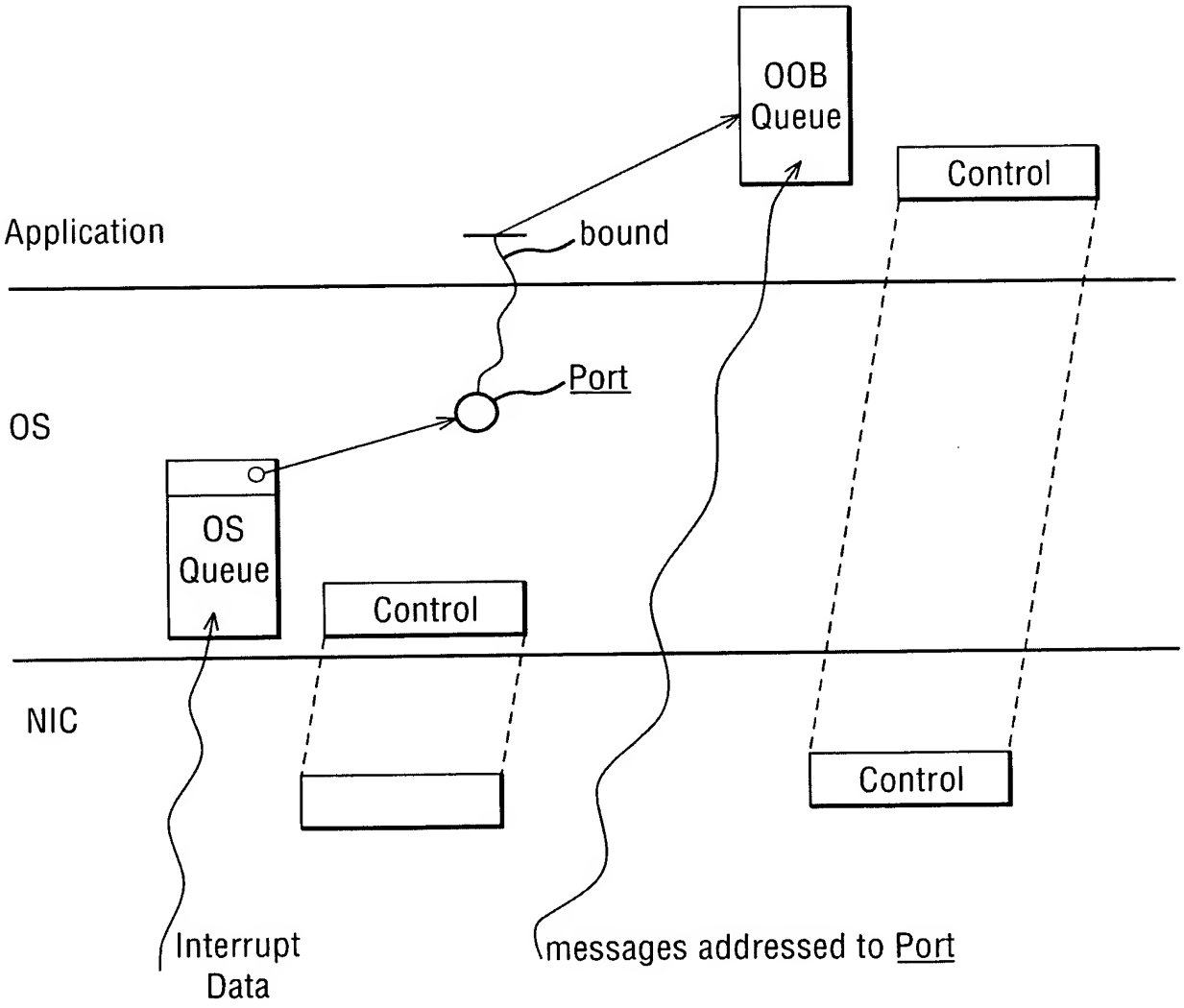

OOB Queue
Control
Application
bound
Port
OS
OS Queue
Control
NIC
Control
Interrupt Data
messages addressed to Port

Fig. 10

[NB order here not relevent]

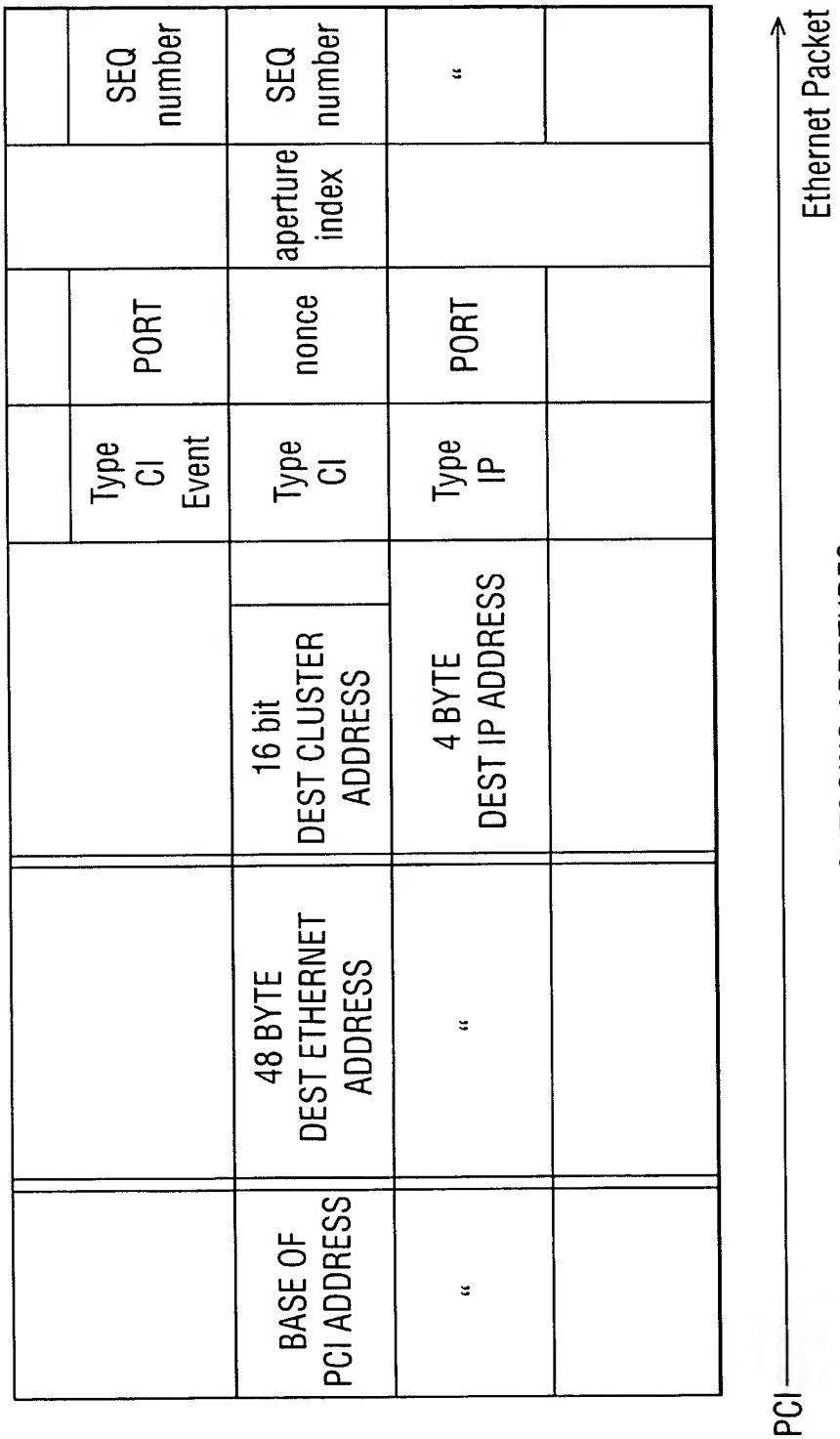


Fig. 11

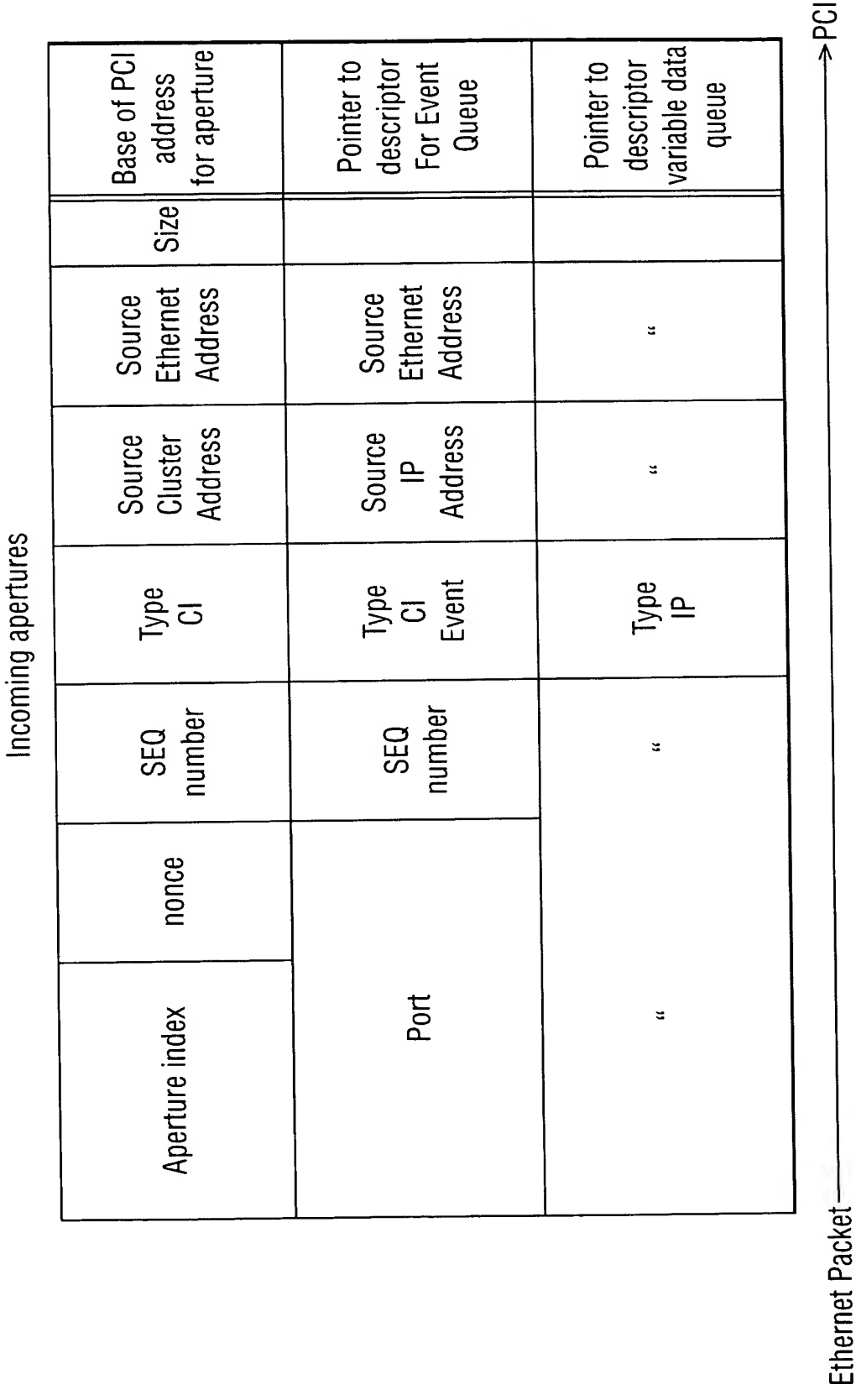
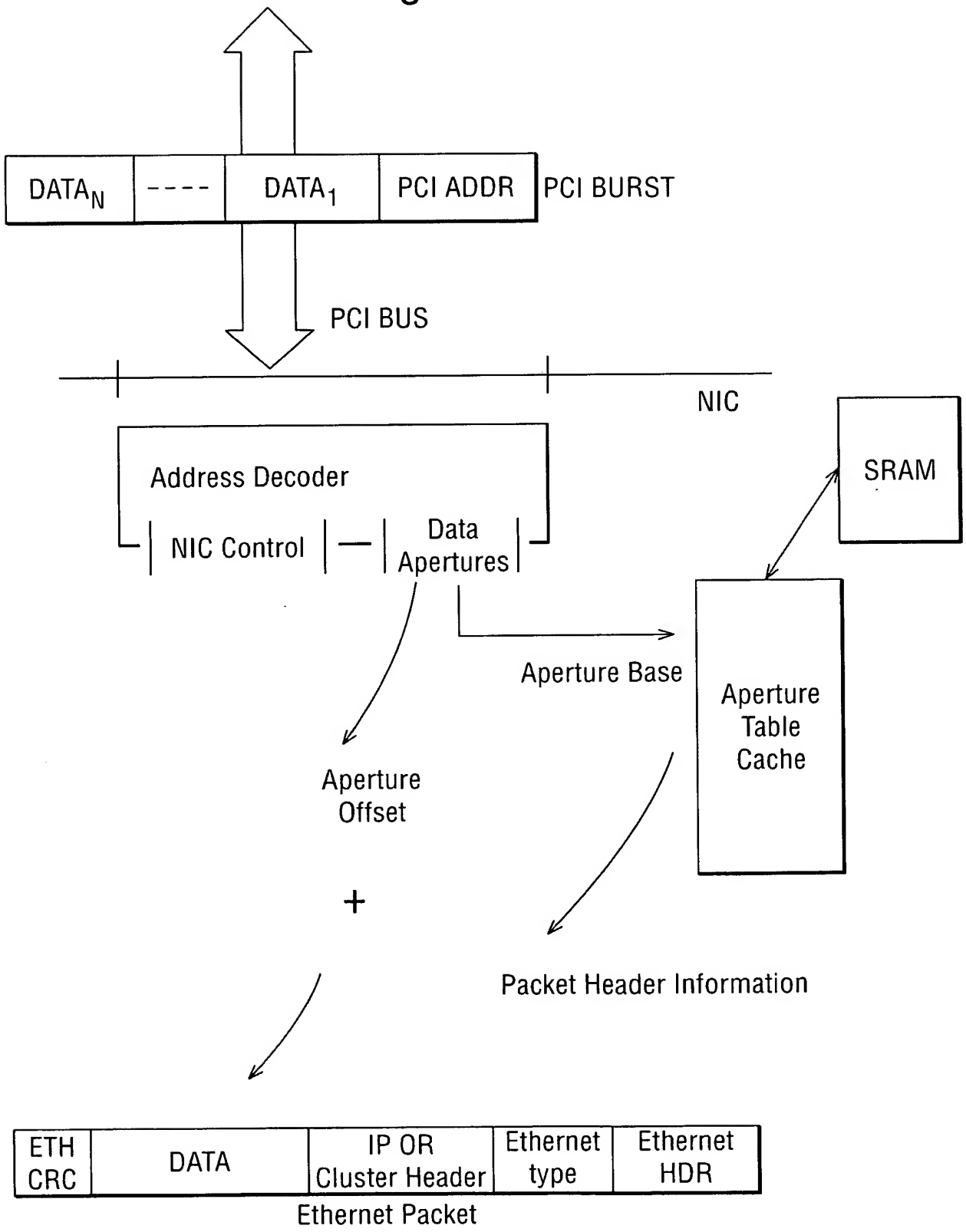
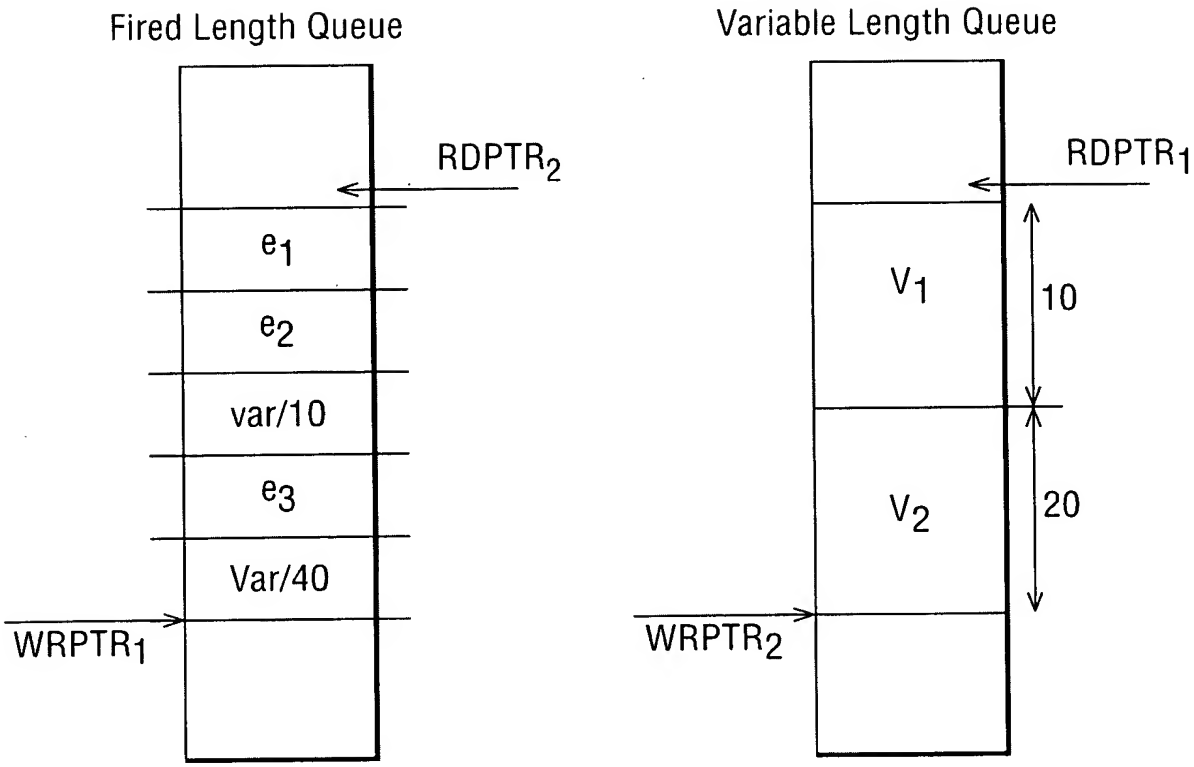

Incoming apertures
Aperture index
nonce
SEQ number
Type CI
Source Cluster Address
Source Ethernet Address
Size
Base of PCI address for aperture
Port
SEQ number
Type CI Event
Source IP Address
Source Ethernet Address
Pointer to descriptor For Event Queue
"
"
Type IP
"
"
Pointer to descriptor variable data queue
Ethernet Packet
PCI

Fig. 12


DATA$_N$

DATA$_1$
PCI ADDR
PCI BURST
PCI BUS
NIC
Address Decoder
NIC Control
Data Apertures
SRAM
Aperture Base
Aperture Table Cache
Aperture Offset
+
Packet Header Information
ETH CRC
DATA
IP OR Cluster Header
Ethernet type
Ethernet HDR
Ethernet Packet

Fig. 13


Fired Length Queue
RDPTR2
e1
e2
var/10
e3
Var/40
WRPTR1
Variable Length Queue
RDPTR1
V1
10
V2
20
WRPTR2